

# Perten Instruments Methodology Check List

## Gluten content and Gluten Index Values

<b>Sample weight</b>	Check that the balance used for weighing the sample is correct, by comparing with known standard weights.
<b>Dispenser</b>	Check your dispenser accuracy by weighing the pumped volume. For example; the weight of 4.8 ml 2% NaCl-solution is 4.84-4.92 gram (20-24°C).
<b>Time settings</b>	Check that time is set to 20 seconds of dough mixing and 5 min. of washing. Compare Glutomatic manual Appendix 1.
<b>Wash water</b>	Check that your washed water volume is 265 +/- 15 ml. This is not critical but should be approximately within these limits. Check that water starts dripping immediately after the first 20 seconds of dough mixing.
<b>Mixing hook</b>	Check that mixing hooks are not bent. Use a ruler and hold against hook. Hooks should be straight. It is preferable that you remove (unscrew) the hook and check this.
<b>Mixing hook – sieve distance</b>	See the Glutomatic manual for adjustment procedures. Distance should be 0.7 mm. Gauges 0.6 – 0.8 mm are supplied with the instrument. Test as figure 15 in manual. Check with 0.6 and 0.8 mm gauges that there is a gap and that it is tight respectively.
<b>Plastic chamber</b>	Check that the plastic chamber 21.10.21 is not sticking on the Plexiglas body 21.10.11. If you assemble the chamber using too much force it may deform. It may then stick to the Plexiglas body when placed into the working position and fixed in the bayonet fitting. With sticking we mean that there is a too tight gap between the chamber and the Plexiglas body and that the chamber hardly can slide along the body.
<b>Sieve holders</b>	Check that you are using the correct sieve holder 21.10.22 & 21.10.32. The sieve holder to be used with the fine sieve is chromed and unmarked. The sieve holder to be used with the coarse sieve for the whole meal method is either black chromate or chromed marked with a groove or ring. You cannot use the marked sieve holder with the fine sieve as the distance between hook and sieve will be different as this holder is made for the coarse and thicker sieve.

**Methodology** Check that sieve is clean before use – this is important. Commercial flours generally give no problems. Experimentally milled flours may be more slimy or sticky and may require that the sieve is taken out from the sieve holder and carefully cleaned.

After adding sample, shake gently so as to spread out sample evenly, direct stream of added mix solution against the side wall. Shake gently to spread solution over all of the flour surface. Compare figures 6 and 7 in the manual. Place the wash chamber into working position without delay.

After washing check that the gluten appears thoroughly washed out.

**ICC 137 or 155** Check that the same methods are compared. The difference in wet gluten content may be 1.5% on flour and 2.5%-units on meal with the ICC 155 with plastic sieves and the plastic centrifuge cassette giving higher results than ICC 137 with metal sieves and the metal centrifuge plate.

We recommend ONLY ICC 155 as we consider the reproducibility as better and as ONLY ICC 155 is used for Gluten Index.

**Centrifuge** When the washing is ready, move the gluten piece(s) to the cassettes in the Centrifuge with as little impact on the gluten as possible. Make sure the Centrifuge is started 30 seconds after the washing is ready, at the signal from the Glutomatic.

When the centrifugation is ready it is important to remove the fraction of the gluten that has passed the sieve in the cassette in the proper way. Make sure that the gluten is cut at the outer surface of the sieve and not pulled out from the holes. Also look for any gluten that may be sitting on the wall of the centrifuge and include that in this fraction.

When the outer fraction of the gluten is weighed, the remaining gluten on the inner side of the cassette is removed by pulling the complete fraction out of the cassette. Make sure all gluten is removed and placed on the balance for weighing.

**Results** When the Wet Gluten Content is calculated, the results shall be reported at a fix moisture content of the sample. See the manual for the calculation.